JLOTS/Navy LOTS R&D Requirements

JLOTS R&D Symposium
1/29/02
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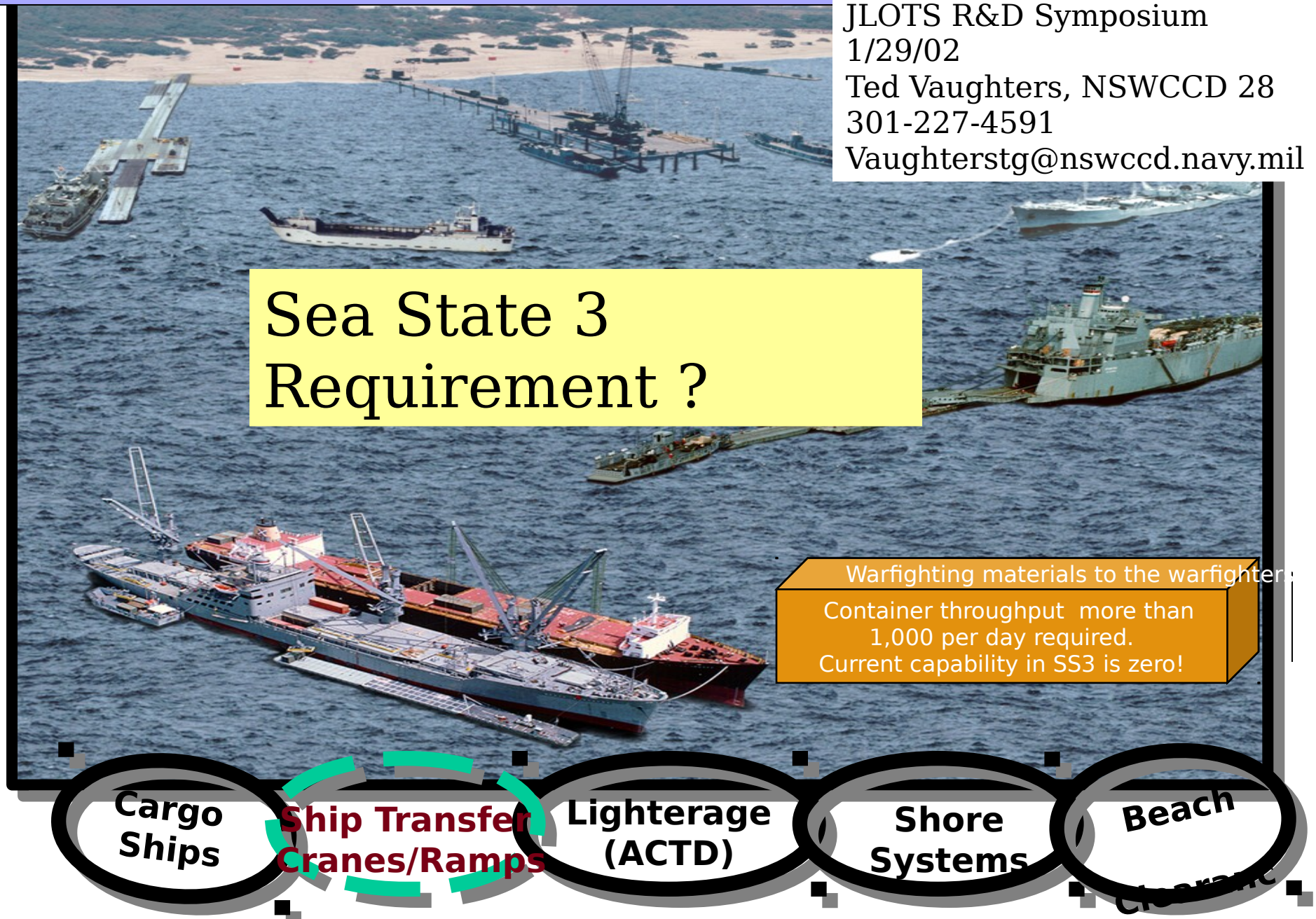


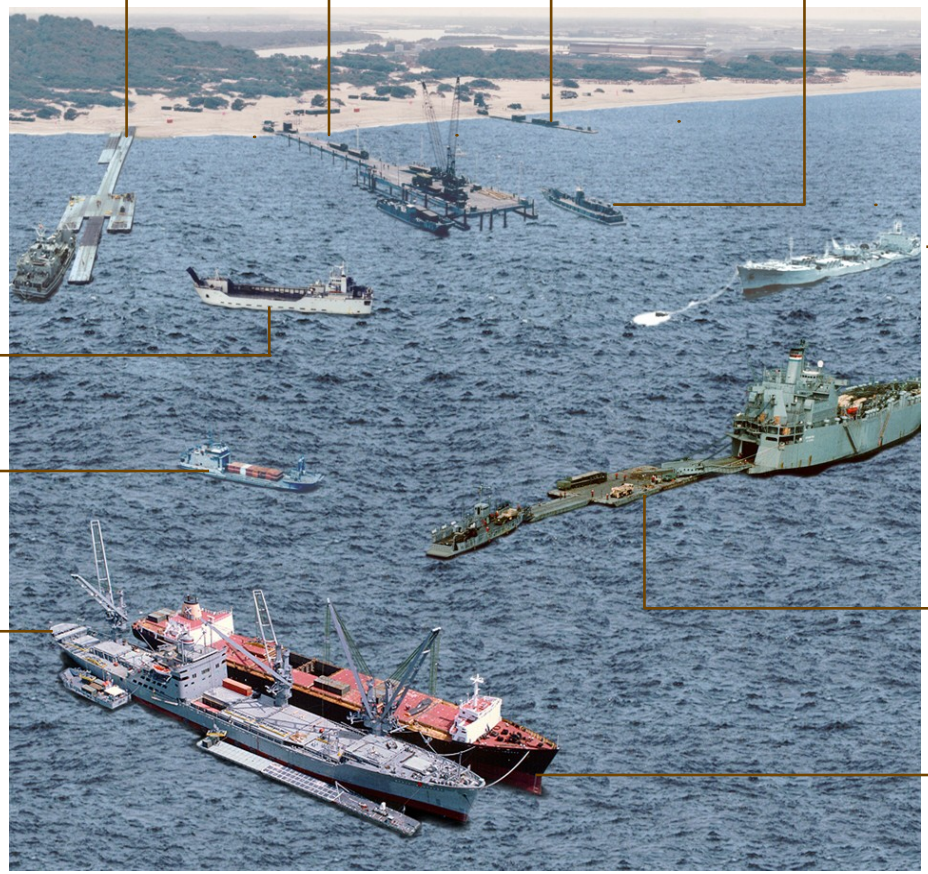
Sea State 3 Requirement ?

Warfighting materials to the warfighter

Container throughput more than 1,000 per day required.
Current capability in SS3 is zero!

Cargo Ships | **Ship Transfer Cranes/Ramps** | **Lighterage (ACTD)** | **Shore Systems** | **Beach Clearance**

JLOTS Operation

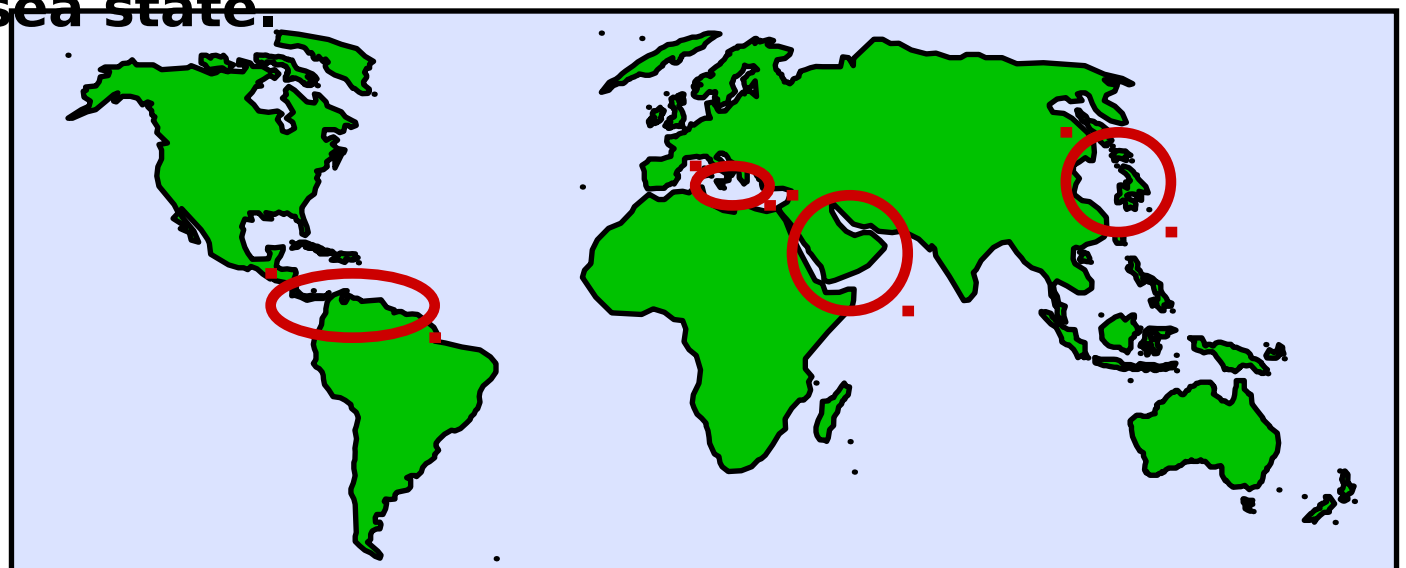


CINC Requirements

- Sustain safe operations in sea state 3
- Service interoperability

The Sea State 3 Issue

- Sea state 3 is a worldwide problem.
- Example: Some ship offload operations were curtailed in Somalia and recently in Combined/Joint Exercise Tandem Thrust in Feb/Mar 97 due to inability to operate in higher sea state.

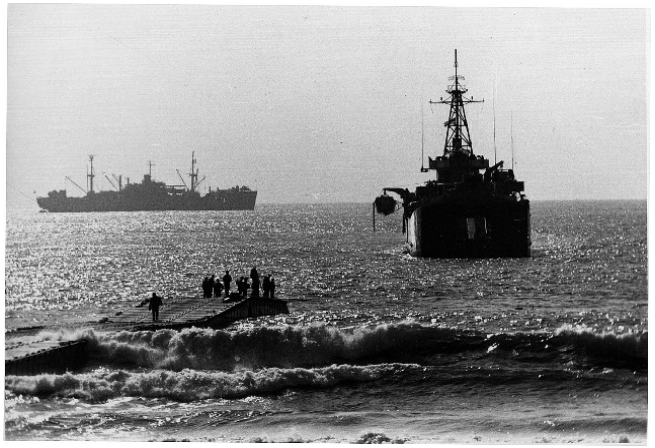


In some Cinc Areas of Responsibility (AORs), sea state 3 exists up to 50% of the time!

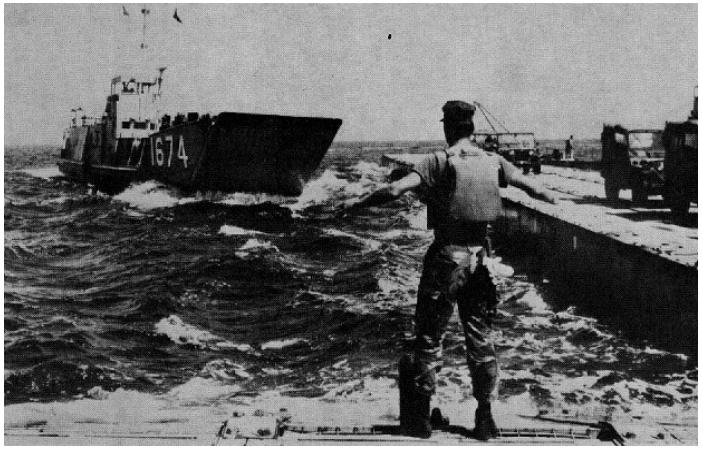
Sea State Conditions
(*Pierson-Moskowitz Sea Spectrum)*

Sea state 3 for JLOTS operations is defined as the combination of sea and swell components, in the littorals, of significant wave heights (H1/3) ranging from 3.5 to 5.0 ft. and wind speeds from 13.7 to 16.4 knots.

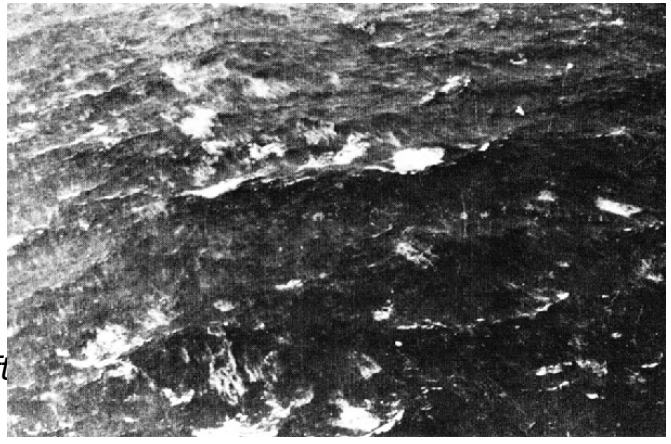
Sea State 0:
Wave Height: 0.1 - 0.15 ft
Wind Speed: 2.5 - 2.8 kts



Sea State 1:
Wave Height: 0.5 - 1.2 ft
Wind Speed: 5.1 - 8.0 kts

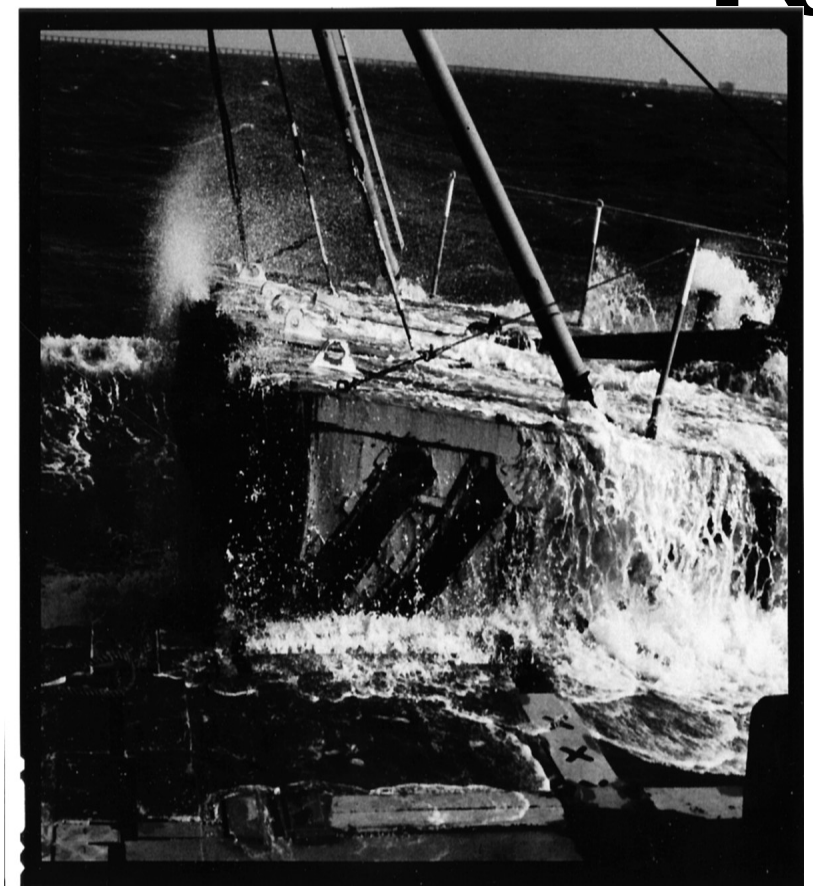


Sea State 2:
Wave Height: 1.5 - 3.0 ft
Wind Speed: 5.0 - 12.7 kts



Sea State 3:
Wave Height: 3.5 - 5.0 ft
Wind Speed: 13.7 - 16.4

Navy Causeway Ferry



In Sea State 3

In Calm Seas

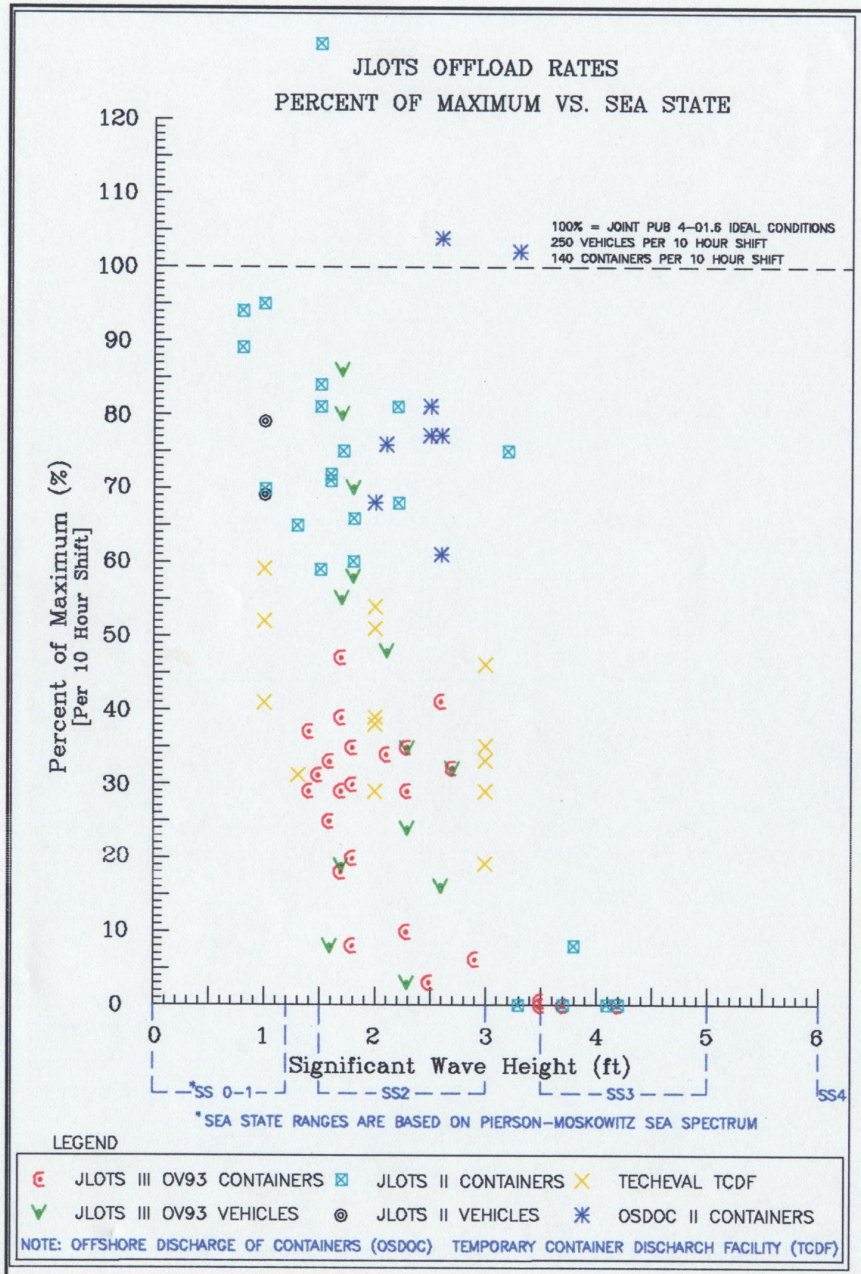
Crane Load Pendulation with Ship Roll

JLOTS RO/RO SHIP OPERATIONS

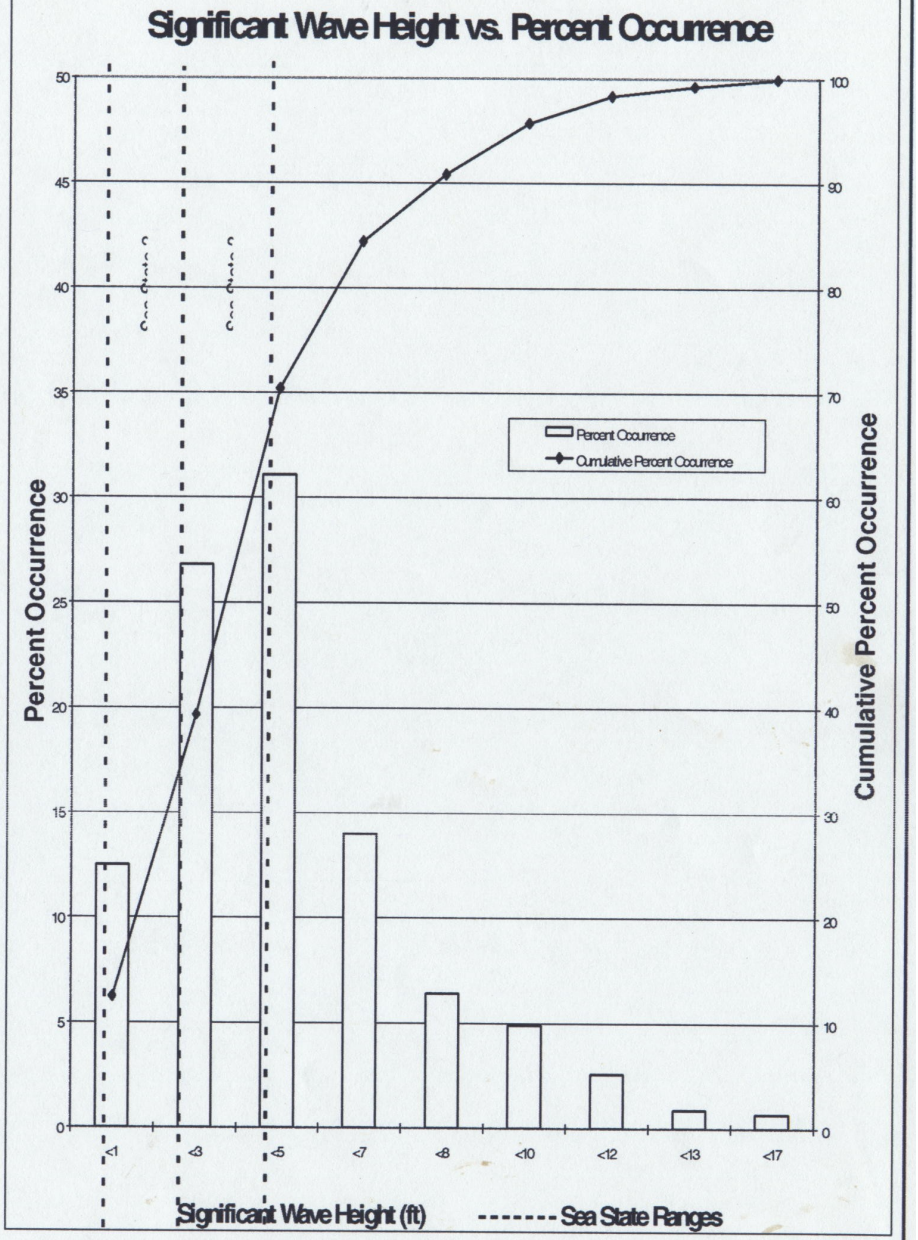
Current Calm Water RRDF

Other Ship/Platform Interfaces

- SS 3 Mooring, Fendering & Interface Systems
- Ship Heading Control



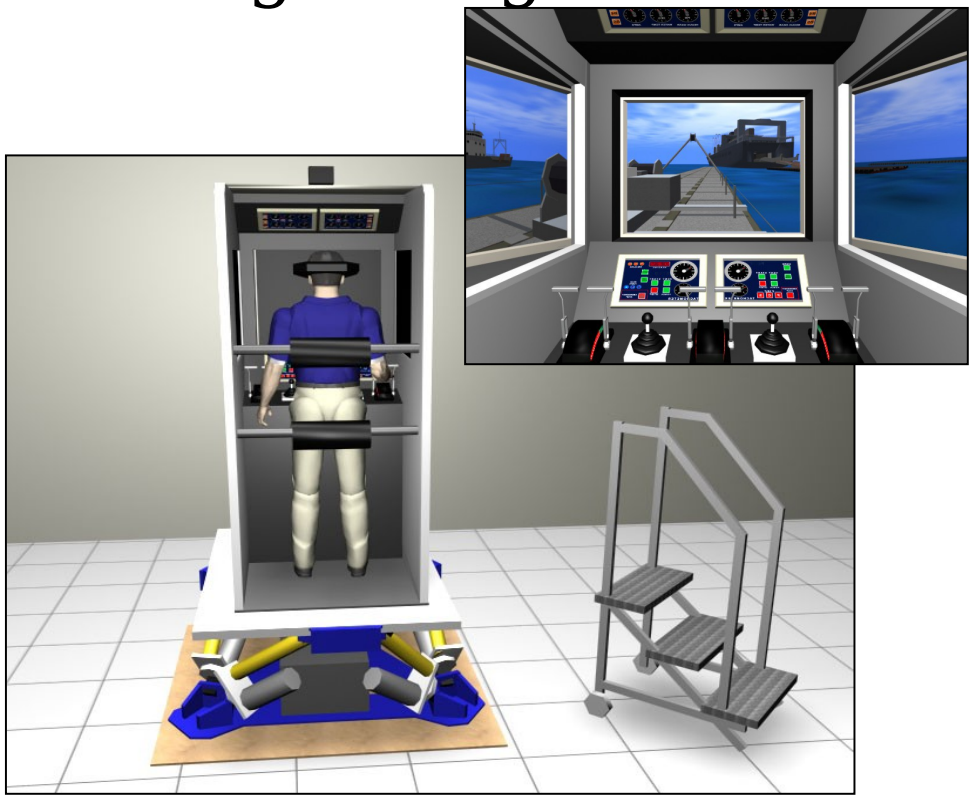
JLOTS Historical Productivity vs Sea State



JLOTS Site Historical Wave Occurrence

JLOTS Environment

- SS3 Environmental Req. Study
- SS3 Lighterage Trainer



Naval Surface Warfare Center
Carderock Division
West Bethesda, MD 20817-5700

CDNSWC-TSSD-98-0001 20 January 1998
Total Ship Systems Directorate
Technical Report

J LOTS Environmental Requirements Study (U)

by

Kelly B. Cooper and Martin F. Mardiros

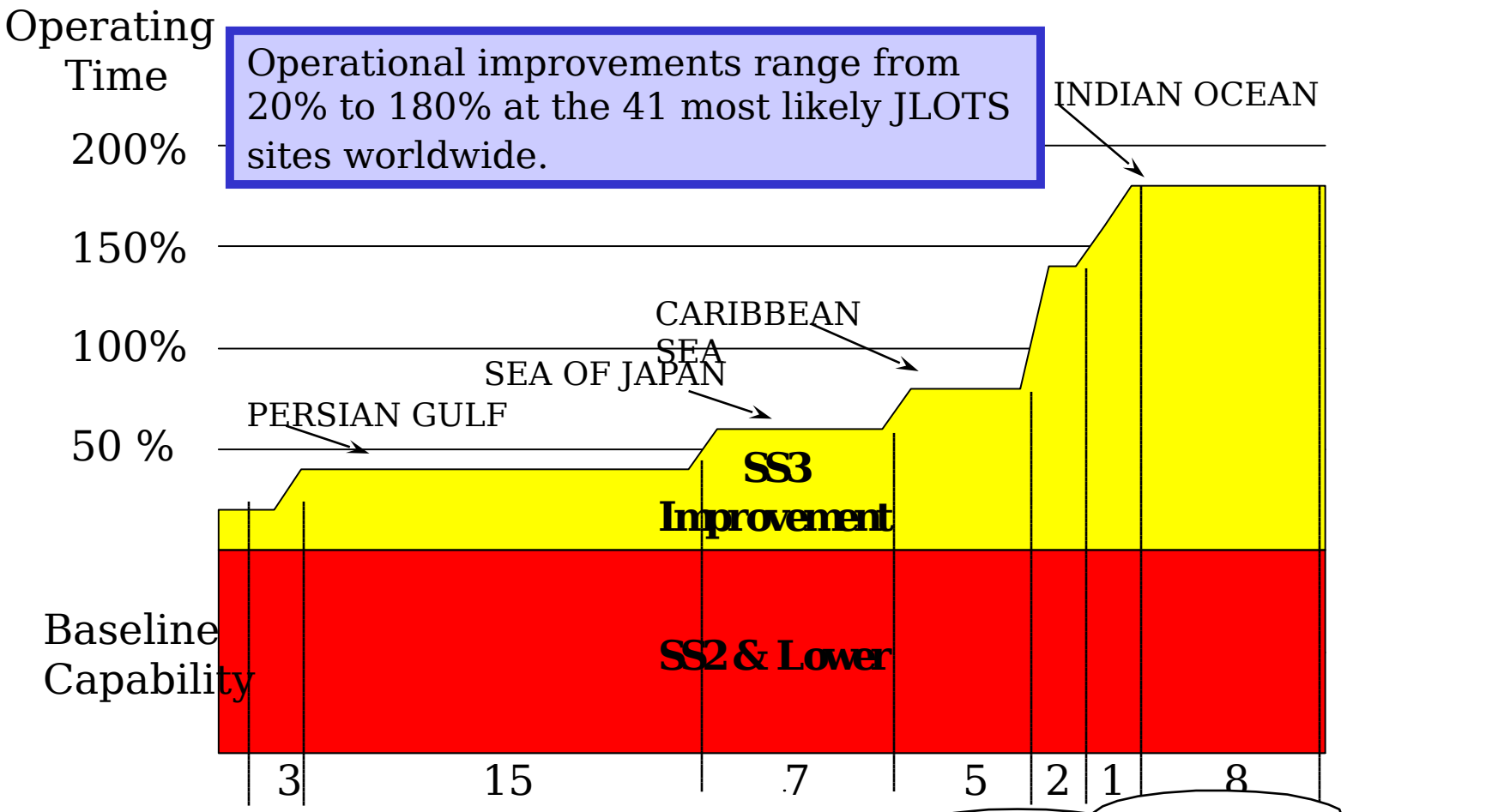
Unclassified Cover Sheet

CDNSWC-TSSD-980001 J LOTS Environmental Requirements Study (U)

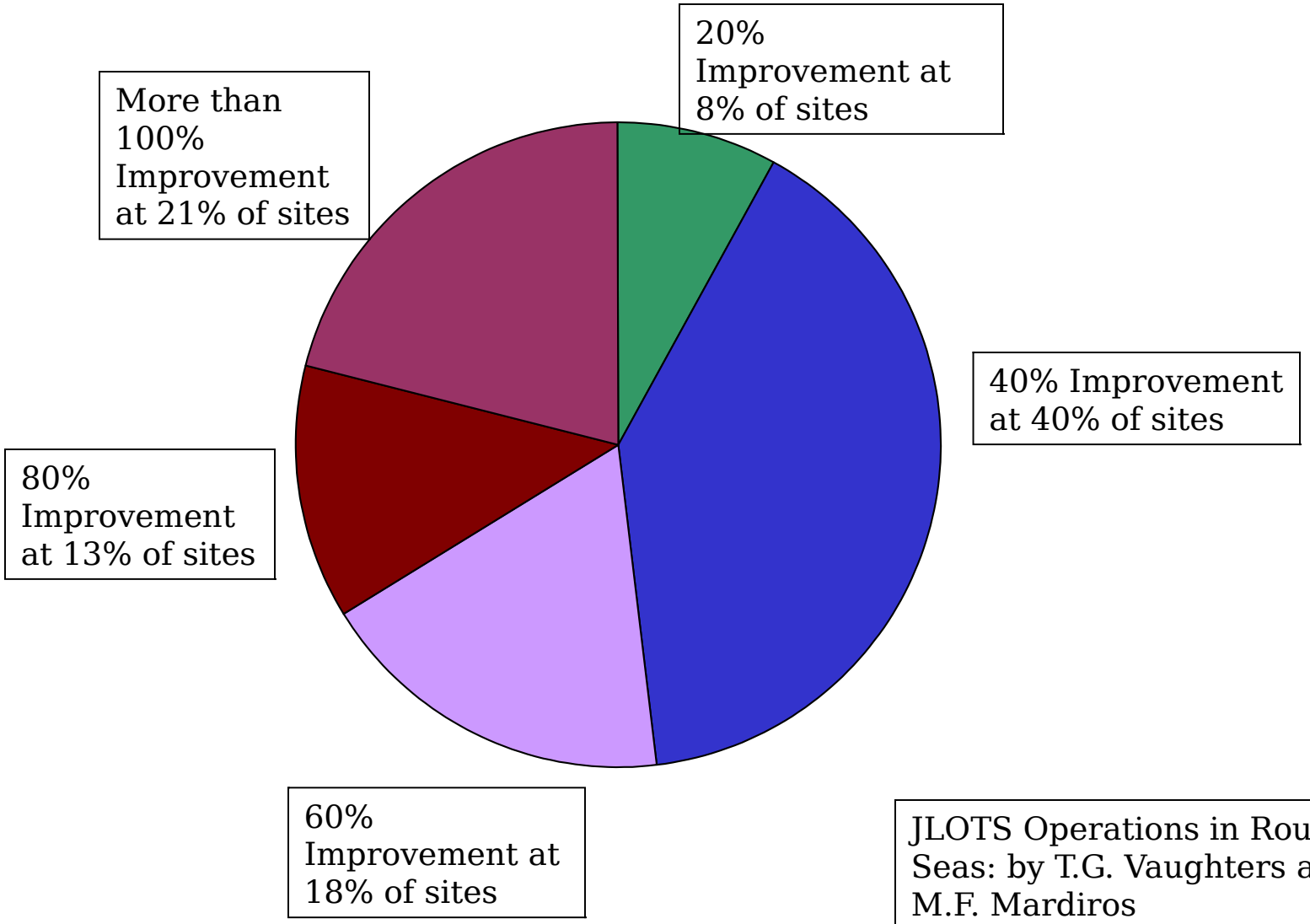
JLOTS Environmental Requirements Study

- Wave Height
- Wind Speed
- Current Speed and Direction
- Tidal Variation
- Anchorage Distance
- Beach Gradient
- Bottom Condition
- Distance from Landing to Road Network
- Hazard Descriptions

SS3 JLOTS Equipment Improve Operating Time



PERCENT IMPROVED OPERATIONAL CAPABILITY BY INCREASING SYSTEM CAPABILITY FROM SEA STATE 2 TO SEA STATE 3



JLOTS Operations in Rough Seas: by T.G. Vaughters and M.F. Mardiros

OPNAV N42 R&D Perspective

- N42 currently supports a myriad of R&D programs to further the LOTS/JLOTS operational capability and future Strategic Sealift Systems
- Current Defense Planning Guidance (DPG) FY03-07 does not include any language regarding JLOTS SS3 capability requirement
- CJCS J4, TRANSCOM, and PACOM continue to state there is a requirement for SS3 capability. Recommending language return to DPG, requiring Services to develop a SS3 capability
- Army-Navy has JLOTS MOA signed Aug 96 to coordinate the RD&A efforts of LOTS/JLOTS interoperable systems. Though Army-Navy currently supporting different platforms, will continue to support coordination of other systems where applicable. JLOTS JIPT Charter to be revised to reflect this
- N42 outyear R&D support shifts emphasis to MPF(F) and T-AOE(X) Concept Development. Support will continue for LOTS/JLOTS Systems
- Challenge is obtaining R&D transition to acquisition programming support